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Accidents.

Most dangerous place in the world. Popular Mechanics. v. 61, no. 6. June, 1934. p. 866-868. National Safety Council's records show that in 1933 accidents in home accounted for 29,500 deaths, close second to 30,500 deaths caused by automobiles.

Agriculture.

Agricultural adjustment; some problems ahead. By M. L. Wilson. 1934. 20p. Mimeographed. U.S. Department of Agriculture. Address before the National Fertilizer Association at Atlanta, Ga., November 13.

Agricultural credit through the Farm Credit Administration. By W. I. Myers. 1934. 13p. Address before the annual meeting of the Agricultural Commission of the American Bankers' Association.

Agricultural outlook for 1934-35. 1934. Mimeographed. U.S. Department of Agriculture, Bureau of Agricultural Economics.

Analysis of agriculture on the Milk river irrigation project. By P. L. Slagsvold and G. H. Bingham. 1934. 80p. Montana. Agricultural Experiment Station. Bulletin no. 290.

Annual report for the fiscal year ending June 30, 1933. 1934. 211p. Florida. Agricultural Experiment Station.

Big thing in Kansas farming. By Raymond H. Gilkeson. Kansas Farmer. v.72. no. 17. September 15, 1934. p. 3, 19. Terracing and contour farming take out up-hill pull in field work. They let you farm hills on level, you farm across slopes. They make rows longer and you work them on level. They check soil washing. They build up fertility.

Economic study of farms in the spring wheat area of South Dakota. By C. M. Hampson and Poul Christopherson. 1934. 19p. South Dakota. Agricultural Experiment Station. Circular no. 19.

Financing the farmer. By W. Forbes Morgan. The Commonwealth. v. 1, no. 6. October, 1934. p. 8-9, 24.

Farmer and the nation. By Chester C. Davis. 1934. 12p. Mimeographed. U. S. Department of Agriculture.

Industrial engineer looks at agriculture. By Peter M. Strang. Journal of Land and Public Utility Economics. v. 10, no. 3. August, 1934. p. 268-274.

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Agriculture. (Cont'd)

Keep production under control, farmers say. Prairie Farmer. v. 106, no.21. October 13, 1934. p. 1. Illinois farmers vote 3 to 1 for adjustment program in 1935.

National agricultural program in relation to the Northeast. By Henry A. Wallace. 1934. 13p. Mimeographed. U.S. Department of Agriculture. Address given at the Agricultural Conference of Northeastern States, New York City, November 8, 1934.

Nature and distribution of types of farming in Washington. Types of farming series, Part III. By Neil W. Johnson and Rex E. Willard. 1934. 64p. Washington. Agricultural Experiment Station. Bulletin no. 301. Indicates causal factors that determine types of farming, and locates and describes type-of-farming areas found in Washington.

Part-time farming for income. By R. L. Adams and J. L. Wann. 1934. 46p. California Agricultural Experiment Station. Bulletin no. 581.

Production of spring vegetables in the lower Rio Grande valley. By W. H. Friend and S. W. Clark. 1934. 56p. Texas. Agricultural Experiment Station. Circular no. 72.

Reopening foreign markets for farm products. Extract from address by Henry A. Wallace. 1934. 7p. U.S. Department of Agriculture. Agricultural Adjustment Administration. Delivered at the American Institute of Co-operation, Madison, Wis., July 11, 1934.

Summary report of progress, July 1, 1932 to June 30, 1934. 1934. 66p. Utah. Agricultural Experiment Station. Bulletin no. 250. Irrigation and drainage, physics, and soils, p. 58-61.

Trends in agriculture in Washington, 1900 to 1930. Types of farming series, Part II. By Neil W. Johnson and Rex E. Willard. 1934. 45p. Washington. Agricultural Experiment Station. Bulletin no. 300. Traces growth of urban and rural population, trends in size of farms over state, and progress made in developing diverse crop and livestock enterprises in which Washington farmers are engaged.

Air Conditioning.

Choosing the right air conditioning system. Part 1. What is proper viewpoint? By A. Warren Canney. Heating, Piping and Air Conditioning. v. 6, no. 11. November, 1934. p. 455-459, 75, back section.

Hook-ups for house-cooling systems. Heating and Ventilating. v. 31, no. 9. September, 1934. p. 40-41. Selective cooling system for residence using central duct system has been discussed on these pages. This system consisted of centrally located cooling unit with supply and return ducts to various portions of house, and electrically-operated dampers in ducts transfer cooling effect from one part of house to the other as desired. Arrangement has disadvantages and there are other possible means of cooling. Drawings show some of these arrangements with information as to their advantages, disadvantages, and features.

Air Conditioning. (Cont'd)

How comfort is measured by effective temperatures. By Harold L. Alt. Domestic Engineering. v. 144, no. 4. October, 1934. p. 89-92, 119-121.

Modern home demands the comfort of modern air conditioning. Domestic Engineering. v. 144, no. 3. September, 1934. p. 91, 126.

Study of unit room coolers in the research residence. By A. P. Kratz, M. K. Fahnestock, and S. Konzo. Heating, Piping and Air Conditioning. v. 6, no. 11. November, 1934. p. 483-489. Principal objects of investigation were (1) determination of method of operation and control of unit room coolers, and (2) determination of performance of unit room coolers as measured by their ice melting capacity and by their ice melting capacity and by their effect on ambient air, including temperature, humidity, and motion.

Tailor-made weather. By R. B. Purdy. Power. v. 78, no. 11. November, 1934. p. 604-605, 607. Air conditioning is just new setup of some old and familiar power units. Behind false front of fancy words, same old pumps, fans, heating and refrigerating coils are doing same old job.

What to tell your prospects about comfort and humidity. By Harold L. Alt. Domestic Engineering. v. 144, no. 3. September, 1934. p. 95-96, 123. How to overcome dryness.

Associations.

Farm equipment institute convention. Farm Implement News. v. 55, no. 21. October 11, 1934. p. 30-34. Proceedings of 41st annual meeting held in Chicago Oct. 10 and 11, 1934.

Water conservation association organized in states of the Great Plains area. Engineering News-Record. v. 113, no. 17. October 25, 1934. p. 542. For purpose of fostering water control and conservation in that region. Called Plains States Floodwater Conservation Association. In addition to water conservation, member states of new organization propose to work together in other matters affecting general development of natural resources of this region. Following officers were elected: F. L. Vaughan, Woodward, Oklahoma, president, and J.C. Caldwell, Trinidad, Colorado, secretary-treasurer. Work of organization will be carried under direction of board of vice-presidents from member states who will elect executive committee.

Building Construction.

Administrators of the better housing program. Architectural Record. v. 76, no. 4. October, 1934. p. 224-225. Regional, state and district directors.

Check list for new construction and modernization of houses. By A. Lawrence Kocher and Albert Frey. Architectural Record. v. 76, no. 4. October, 1934. p. 257-286. Includes dimensions of essential equipment and furniture.

Building Construction. (Cont'd)

Compound lumber units offer "prefabricated house" solution. American Builder and Building Age. v. 56, no. 10. October, 1934. p. 46-47. Uses 5-ply compound lumber panels for outside walls, floor and roof; 3-ply for inside partitions. These ply-wood panels, 3 feet wide are combined with light steel studs and joists, set on 3 foot centers to provide necessary strength and also to lock panels together.

D. C. builders feature steel framing. American Builder and Building Age. v. 56, no. 10. October, 1934. p. 35-37.

8 steps in constructing concrete joist addition. American Builder and Building Age. v. 56, no. 10. October, 1934. p. 32-33.

Expanded housing program proposed by President. Engineering News-Record. v. 113, no. 17. October 25, 1934. p. 540. Will be introduced in President Roosevelt's proposals to Congress.

Expansion of PWA and housing programs favored by present Administration plans. Engineering News-Record. v. 113, no. 18. November 1, 1934. p. 568. Extension and expansion of program of public works and housing is in forefront of administration planning for coming year. Direct relief is to be discarded in drive to create work. Program aims at another big drive to energize business to point where it will move with its own momentum. Proposals now under consideration reach total of $5,000,000,000. By its very magnitude as new business stimulating force, plan now forming indicates administration's recognition that Government cannot continue indefinitely to borrow money that does not earn a return. Major features of new program may be reimbursable but not strictly self-liquidating. Financing will be based on fairly long-term amortization at nominal interest rates.

Iron anchors brace house to resist storms. Popular Mechanics. v. 62, no. 1. July, 1934. p. 77. Drawing shows how iron braces anchor a building to withstand high-velocity winds.

Now you can fix up the place. Prairie Farmer. v. 106, no. 21. October 13, 1934. p. 8. Discussion of how the Federal housing act can help.

Resumption of home building. By John H. Fahey. Architectural Record. v. 76, no. 4. October, 1934. p. 221-223. Revival of private house building was conditioned on (1) arresting decline in private house values and (2) liquefying assets of lending institutions which invest in home mortgages. These conditions have now been met by Home Owners' Loan Corporation and Federal Home Loan Bank System. Fear that home values would be governed by foreclosure prices rather than by normal economic factors has been removed and private capital is available for private house construction.

Conservation.

Water conservation is a paramount issue. Idaho Farmer. v. 52, no. 16. August 9, 1934. p. 6. Up to first of August, $800,000 had been appropriated and expended in serious effort by Federal Government to provide

Conservation. (Cont'd)

additional water for crops and livestock, and $100,000 more has been made available. Developing water holes and springs in mountain ranges has been important part of this work, and has given best demonstration of practical value. Severe losses have also been alleviated by drilling wells, cleaning irrigation stream channels, pumping water and building canal bypasses in a few districts of southern Idaho where farmers otherwise would have experienced heavy crop reduction.

Cotton and Cotton Ginning.

Significanace of federal political control of cotton industry. By Dr. A. B. Cox. Cotton Ginners' Journal. v. 6, no. 1. October, 1934, p. 3, 15. Raises some of the questions involved and gives essential facts pertaining to cotton industry.

Dairy Equipment.

Constructing concrete milk cooling tank. Hoard's Dairyman. v. 79, no. 17. September 10, 1934. p. 389. Plans and construction details that give complete information for the man who wants to know how to build concrete cooling tank.

Dams.

Analysis of Boulder Dam spillways made by Swiss laboratory. By Dr. E. Meyer-Peter and Dr. Henry Favre. Engineering News-Record. v. 113, no. 17. October 25, 1934. p. 520-522. Capacity of side-channel-type structures studied by the Swiss hydraulic laboratory using an analytical solution checked by a 1:150 scale model test. Method described and results outlined.

Bonneville dam on the Columbia. Engineering News-Record. v. 113, no. 18. November 1, 1934. p. 547-552. Power development and navigation improvements combined in dam being built across Columbia river 40 miles above Portland, Ore., unuaual geological conditions controlled design and location of dam, power house and locks.

Drainage.

Draining Italy's swamps. Canadian Engineer. v. 67, no. 10. September 4, 1934. p. 9. Under the provisions of the Mussolini law of 1928 calling for an expenditure of $565,000,000 for public works, marshes are now almost unrecognizable. Canals have been constructed for drainage and irrigation; pumping and power stations have been erected; woods have been cleared. Engineering feat which ranks with digging of Panama Canal and reclamation of Zuider Zee.

Physical relationships between marsh areas and lake levels. By G. L. Lincoln. Science. v. 80, no. 2075. October 5, 1934. p. 321-322. Lakes tend to be dependent upon marsh areas rather than usual converse of this.Theory suggests that, if marshes now dry could be frozen wet, lake levels could

Drainage. (Cont'd)

be raised. If marshes can be made to retain enough water over summer months, it seems plausible that surface drainage could be restored. It would indicate to practical conservationists that it is fully as important to confine water on surface of marshes as it is to retain water in lakes by means of dams. Theory may demonstrate enough dependence of lakes on marshes to change economic use of marsh lands over large area.

Earth Pressure.

Side pressure on retaining walls: Letter from Anders Bull. Engineering News-Record. v. 113, no. 17. October 25, 1934. p. 535.

Electricity.

Electric light and power industry in 1933, with current figures to June 30, 1934. 1934. 28p. Edison electric institute, New York. Statistical bulletin no. 1. Statistics embrace operations of enterprises devoted exclusively to generation and distribution of electricity to public and operation of electric departments of enterprises which maintain electric light and power systems jointly with other public utility services.

Electricity on the Farm.

Electrically operated barn machinery. Rural Electrification and Electro-Farming. v. 10, no. 113. October, 1934. p. 149-151. Deals in general way with many types of electric motors which are now available.

Electricity on the poultry farm. Rural Electrification and Electro-farming. v. 10, no. 113. October, 1934. p. 151-152, 157.

Farms need more electrification. By Dr. E. W. Lehmann. Prairie Farmer. v. 106, no. 21. October 13, 1934. p. 20.

How the Federal Housing Act helps farmers obtain electric equipment. By George W. Kable. Electricity on the Farm. v. 7, no. 10. October, 1934. p. 6-8, 15. Procedure to secure a loan. Duration and payment of loans.

Is grinding with electric power an economy on the farm? By T. E. Hienton. Electricity on the Farm. v. 7, no. 10. October, 1934. p. 10-12. Table gives annual cost of grinding 51.2 tons of grain.

Progress in farm electrification as gleaned from an agricultural engineers meeting. By L. J. Smith. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 362-363.

Report on C.W.A. national survey of rural electrification. By Geo. W. Kable and R. B. Gray. 1934. 68p. Mimeographed. U.S. Department of Agriculture. Purposes of survey were to obtain information supplemental to data from Housing Survey, Census, and other sources, relative to present availability of electric service to farmers, its use, and possibilities of extending service to additional farms.

Electricity on the Farm. (Cont'd)

Two-circuit switch advantageous. Electricity on the Farm. v. 7, no. 10. October, 1934. p. 14.

Engines.

Gas engine carried on back motorizes hands. Popular Mechanics. v. 62, no. 1. July, 1934. p. 50. Portable gasoline engine weighs about thirty pounds. Engine has numerous attachments so that it can perform almost any outside task usually done with hand tools. Crankless two-stroke power plant develops one horsepower at 3,000 revolutions per minute, and uses about one-half pint of gasoline per hour. Dry-disk clutch slips at overload above one and one-fourth horsepower, and possibilities of explosion are minimized by using special floaterless carburetor and flywheel magneto for ignition. Flexible shaft has control throttle handy at end next to tool being used. Various units can be attached or released by hand from coupling without using bolts, nuts or keys. On stationary jobs engines can be placed on ground or bench. It has attachments for working coil, pumping water and spraying, mowing lawns, sweeping, trimming trees, clipping hedges, and carpenter work.

Portable motor-generator supplies house current. Popular Mechanics. v. 62, no. 1. July, 1934. p. 75. Motor-generator weighs only 60 pounds. Gasoline motor, which is one cylinder, air-cooled and easy to start, and generator are bolted and coupled on rigid aluminum base. Speed of engine is governed. Ignition is shielded for short and long wave radio work. Gasoline is supplied to engine from tank in base. Generator is self-excited with its voltage regulated automatically to eliminate possibility of burning out electric lamps, motors or radios. Plant will operate ten fifty-watt lamps or supply filtered alternating current for any standard short-wave or broadcast receiver, radiophone or telegraph transmitter up to 350 watts input.

Triumph of the Diesel. Popular Mechanics. v. 62, no. 1. July, 1934. p. 10-13.

Erosion Control.

Causes of erosion and various methods of shore protection. By W. M. Burgoyne. Canadian Engineer. v. 67, no. 10. September 4, 1934. p. 3-5. Waves and currents and their effect on coast line. Shore built up by construction of groynes. Various types of sea-wall described.

Demonstrating erosion control on big scale. By Paul H. Walser. Farm and Ranch. v. 53, no. 17. September 1, 1934. p. 3. Not a reclamation project, but will show how to save remaining good soil.

Erosion and land utilization in the driftless area of Winconsin. By Melville H. Cohee. Journal of Land and Public Utility Economics. v. 10, no. 3. August, 1934. p. 243-253. Factors which influence the extent of erosion; study of land use as related to steepness of slope; Pasture and forest land use; Public policies for erosion control.

Erosion Control. (Cont'd.)

Farms afire! By M. N. Beeler. Capper's Farmer. v. 45, no. 9. September, 1934. p. 6-7. Continuous plowing and tillage keep alive the flames that unduly speed destruction of soil fertility, and increase losses from wind and water erosion.

Fighting erosion in the southwest. Farm Implement News. v. 55, no. 23. November 8, 1934. p. 18. Notable terracing program to preserve land values.

Highwayman of fields. By Hugh H. Bennett. Farm Journal. v. 58, no. 11. November, 1934. p. 5, 17. Erosion steals rich top soil at rate of inch a year.

Latest results of engineering experiments at the soil erosion experiment stations. By C. E. Ramser. 1934. 12p. Mimeographed. U. S. Bureau of Agricultural Engineering. Delivered at the Annual Meeting of the American Society of Agricultural Engineers at Detroit, Michigan. June 20, 1934.

Memorandum to E. C.W. technicians on the design and control of broad, shallow terrace outlet ditches. Emergency conservation erosion camps. 1934. 5p. Mimeographed. U. S. Department of Agriculture. Bureau of Agricultural Engineering.

Okatibbee Creek watershed bulletin. 1934. U.S. Department of the Interior. Soil erosion service. Purpose is to keep farmers in area posted as to developments, and to put before them discussions of best and most practical soil erosion control methods known to modern agriculture.

Physical and chemical characteristics of the soils from the erosion experiment stations - second report. By H. E. Middleton, C. S. Slater and H. G. Byers. 1934. 62p. U. S. Department of Agriculture. Technical report no. 430.

Soil erosion. By Milton Joyce. Tennessee Farmer. v. 27, no. 8. May-June, 1934. p. 3, 5.

Soil erosion - a national menace. By H. H. Bennett. Scientific monthly. v. 39, no. 5. November, 1934. p. 385-404.

Explosives.

Instruction in use of explosives. By W. B. Jones. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 349. Balanced viewpoint would seem to demand that explosives practice be built into subject matter of organized agricultural engineering education, correlating it at every point with other phases or branches of that subject matter.

Farm Buildings and Equipment.

Farm structures division program. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 368. There are at present four topics to which special attention will be given; (1) grain storage; (2) rural housing; (3) cooperative farm building plan service, and (4) responsibilities of extension agricultural engineers in present-day farm structures problems.

Farm Machinery and Equipment.

Agronomic evaluation tests on mechanical blocking and cross cultivation of sugar beets. By A. W. Skuderna and others. 1934. 23p. U.S. Department of Agriculture. Circular no. 316.

Development of combine reduces soybean losses. By C. B. Juday. Purdue Agriculturist. v. 29, no. 1. October, 1934. p. 1, 9.

Financing implement sales under the new deal. By H. G. Davis. Implement Record. v. 31, no. 11. November, 1934. p. 14-15. Summarizes present situation.

Five thousand years of farm tools. Farm Implement News. v. 55, no. 21. October 11, 1934. p.21. Exhibit will encompass four fundamental operations for which farm tools have been developed, namely, plowing, seeding, reaping and hay making, and will range from primitive man who scratched the soil with a stick to proprietor of 20th century mechanized farm. Museum of Science and Industry, Chicago.

Flax and the combine: Editorial. Farm Implement News. v. 55, no. 21. October 11, 1934. p. 28. It is stated that harvesting loss ran as high as 30 per cent in 1933, utilizing combine pick-up method. Combines in stage of diversification. There is talk of finding bar cylinders in combines heretofore wedded to spike type. There is rumor of experimental combine with rubber cylinder and revival of brush - cylinder combine.

Harvesting alfalfa with a windrow pick-up baler. By J. Brownlee Davidson and William H. Carter. 1934. 202-216 p. Iowa. Agricultural Experiment Station. Bulletin no. 322.

Lister improvement that will retain moisture. By Donald Dilworth. Iowa Agriculturist. v. 35, no. 1. April, 1934. p. 11. Mechanically, attachment consists of two 4-bladed "paddle wheel" rotators which are mounted directly behind furrow openers and planter boxes. For corn planting a chain drive is used which times dropping of corn and movement of "paddles." On opposite side is hydraulic shock absorber arrangement such as is used on automobile. When operator wishes to dam summer fallow, this shock absorber is used instead of chain drive. Pressure of soil, when greater than hydraulic resistance, causes "paddle wheel" to turn and "dump" soil voluntarily. During coming summer intensive experiments with new machine will be made in Iowa and Kansas.

Notes on the technique of mechanized farming. By J. E. Newman. Oxford, University Press, 1934. 44p. Institute for research in agricultural

Farm Machinery and Equipment.

engineering, University of Oxford. Results of survey begun in November, 1930: 1. Farms are now directly and indirectly employing more labour than land carried before its equipment was mechanized; 2. Most farms which started as purely specialized units for production of one commodity, are now diversifying on increasing scale; 3. Yields are as good or better than those of farms run on more traditional lines.

Fences.

Building farm fences. Hoard's Dairyman. v. 79, no. 18. September 25, 1934. p. 412. Gives diagram of fence post bracing.

Good farm fences. American Lumberman. no. 3033. October 27, 1934. p.24-25. Good fence creates reputation for thrift and care. It adds to value of land as collateral in securing loans. It is more than so much capital investment in farm, for it indicates that owner understands importance of primary equipment and marks him out as capable and skilled farmer.

Fire Protection.

Stitch in time saves nine and preventing everyday farm fires. By Glen Liston. Iowa Agriculturist. v. 35, no. 1. April, 1934. p. 10. Points are: 1. Prevent sparks from falling on combustible roofs. 2. Check up on defective flues. 3. Proper operation of heating plants. 4. Prevention of spontaneous combustion. 5. Adequate lightning protection.

Fireplace.

Bar-B-Q fireplaces for the garden. Popular Mechanics. v. 62, no. 1. July, 1934. p. 130-131.

Flood Control.

Construction starts soon on Muskingum flood-control dams. By Theodore T. Knappen. Engineering News Record. v. 113, no. 18. November 1, 1934. p. 563-565. Final plan of flood control and water conservation calls for 15 dams and reservoirs. Total cost estimated at $35,290,000.

Remote-control river gauge warns against floods. Popular Mechanics. v. 62, no. 1. July, 1934. p. 87. Gauge takes readings, which are transmitted to recording instruments by electrical current. Housed in water-tight concrete building, equipment is safe from flood.

Flow of Water.

Pile trestles as channel obstructions. By David L. Yarnell. 1934. 26p. U.S. Department of Agriculture. Technical bulletin no. 429.

Fuels.

Alcohol gasoline blends. By Ted S. Kiesling. Iowa Transit. v. 39, no. 2. November, 1934. p. 3-5. Purposes of this study are as follows: 1. To find some method, if possible, of causing ninety-five per cent commercial alcohol to mix with gasoline. 2. To determine effect on anti-knock properties of fuel by increasing per cent of alcohol. 3. To discover effect on power developed in stock automobile engine burning fuel mixtures. Following conclusions are obtained: 1. It is possible to get even homogeneous mixture of cheap commercial alcohol and gasoline by adding $C_{10}H_{18}OH$. 2. Combination of alcohol and gasoline increases octane number of fuel which makes possible greater compression ratio, hence more power. 3. It is impractical to add alcohol to add alcohol to gasoline from consumers' standpoint until price of commercial alcohol is close to price of gasoline.

Engine fuels to meet farm service. By William Harrigan. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 352. Cost of petroleum fuel over wide distillation range will soon approach uniform price for given delivered quantities. It therefore behooves engineering talent of nation to design engines, whether Diesel, kerosene, or gasoline, that will produce most satisfactory and economical power, taking into consideration all factors, such as initial cost, maintenance cost, ratio of power to weight, hours of service, as well as fuel and oil consumption costs per unit of work. Engine fuel for farm requirements will be whatever engine designers are able to prove is needed.

Fuel from sewage and cellulosic waste. By R. E. Hussey, S. B. Row, and W. W. Allison. 1934. 50p. Virginia Polytechnic Institute. Engineering Experiment Station series. Bulletin no. 18.

Seven new features in 50,000-mile Uniontown anti-knock tests. National Petroleum News. v. 26, no. 36. September 5, 1934. p. 18-20. New features of this second series of co-operative road tests not included in similar project two years ago were; (1) Level road tests; (2) "blind tests"; (3) investigation of effect of type of reference fuel on road knock ratings; (4) variation in spark settings; (5) blending of non-knocking test fuels with low octane gasoline to obtain rating by extrapolation; (6) observations with "electric ear"; (7) high speed cross-country runs. Object of tests was: (1) To check validity of correlation between road knock ratings and laboratory knock ratings; (2) to indicate path of research aimed at adapting fuels and engines to better advantage.

Heating.

Electric heating in farmhouse. Rural Electrification and Electro-Farming. v. 10, no. 113. October, 1934. p. 172-173.

Heater cables for the window increase room comfort. Popular Mechanics. v. 61, no. 6. June, 1934. p. 853. Cold drafts from large windows may be eliminated and comfort increased by installation of electric heater cables around and across windows. Systems, which has been tested in Germany, uses only six watts for raising temperature one degree over space about forty inches square.

Heating. (Cont'd)

Modern unit stokers for heating. Heating and Ventilating. v. 31, no. 9. September, 1934. p. 29-39, 77. Discussion of kinds, features, competitive and commercial position, considerations and methods for use in selecting, the coal problem, installation, and service. While heating stokers of unit type are by no means new, they have not passed stage where great amount of ingenuity is still being spent on their design. Several types are: 1. Horizontal feed; 2. Over-feed; 3. Underfeed. Each of these general methods has several variations and some of these can be described briefly.

Test to be made of heating homes by electricity. Domestic Commerce. v.14, no. 13. November 10, 1934. p. 145. Electrical house-heating experiment is to be conducted by Washington State College in 300 buildings at Mason City. Buildings are to be heated electrically the year through, and observations are to be made on results. It is announced that some of houses will be air conditioned, and these will be studied on small scale. Tests are planned to cover period of three years, and are expected to establish practicability or impracticability of house heating by electricity.

Hotbeds.

Electric heat for propagating and growing plants. By B. D. Moses and James R. Tavernetti. 1934. 18p. California. Agricultural Experiment Station. Circular no. 335.

Forcing gladiolus outdoors by heating the soil with electricity. By James R. Tavernetti and S. L. Emsweller. 1934. 14p. California. Agricultural Experiment Station. Bulletin no. 584.

Houses.

Building a log cabin. Popular Mechanics. v. 61, no. 6. June, 1934. p. 936-939.

Cottages in the country. By Frank Wallis. Better Homes & Gardens. v.12, no. 10. June, 1934. p. 18-19, 80-81.

Facts of Nation's homes. Domestic Commerce. v. 14, no. 13. November 10, 1934. p. 148. Summary totals are based on preliminary reports for 64 cities covered in real property inventory, conducted by Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington, D.C.

Farmhouse plans. By Wallace Ashby. 1934. 70p. U.S. Department of Agriculture. Farmers' Bulletin no. 1738.

Fourteen three-room and sixteen four-room residences at government camp at Grand Coulee dam. Columbia basin project, Washington. 1934. 66p. U. S. Bureau of Reclamation. Specifications no. 599.

Houses put together like toy building sets. Popular Mechanics. v. 61, no. 6. June, 1934. p. 876. All joists, roof trusses, window frames and trim, door jambs and bracings are punched, stamped and shaped out of

Houses. (Cont'd)

galvanized sheet steel, which is rust-resisting. Metal "building blocks" are adaptable to substitution for wood framing. Cut-out portions of framing provide space for electrical conduits, water pipes, gas pipes, plumbing lines and heating systems, well hidden but strongly trussed against movement by steel partitions to which they are tied with metal bands. Special galvanized bolts hold various pieces in place. Metal corners of door jambs and trim are welded to prevent possibility of pulling apart under strain. Prongs punched through metal pieces at intervals provide for attachment of metal lath for stucco and plaster. Lightness of pieces is obtained by stamping out excess steel. All parts are fabricated from architectural plans at factory, and are put together on job.

Housing schemes check depression. Canadian Engineer. v. 67, no. 9. August 28, 1934. p. 14. This form of public work would have had dual advantage of paying for relief itself and of providing work for many types of mechanics. Unfortunately Canada has no trained officials in housing work such as they have in Great Britain. Only sure way for any housing scheme to be successful is to secure co-operation of men of experience in building trades.

Make mine modern. By Elizabeth Cook. Country Home. v. 58, no. 11. November, 1934. p. 14-15, 31-33. Discussion of modern trends in house building as brought out at World's Fair.

Michigan farm homes. By C. H. Jefferson. 1934. 43p. Michigan. Agricultural Experiment Station. Special bulletin no. 251.

Origin of present-day architecture. v. Characteristics of the French farmhouse. By Don Graf. American Home. v. 12, no. 2. July, 1934. p. 92-93.

Plans for minimum-cost houses made available. Domestic Commerce. v. 14, no. 13. November 10, 1934. p. 150. Collection of plans and perspectives of small, minimum-cost houses has just been made available by the Division of Subsistence Homesteads of United States Department of the Interior, with publication of bookley, "Homestead Houses." Perspective drawings and floor plans of 32 houses designed for use on 63 homestead projects being developed by the Division are contained in booklet. Division cannot furnish working drawings and detailed specifications, but it will have prepared within a few weeks simple drawings which will permit any competent contractor to reproduce house for person unable to hire architect.

Houses, Remodeling.

Dressing up your home. By R. O. Buck. Popular Mechanics. v. 62, no. 1. July, 1934. p. 120-126.

Hydrology.

Hydrological data from the Miami conservancy district. By C. S. Bennett. Engineering News-Record. v. 113, no. 18. November 1, 1934. p. 556-558. Continuing observations on flood-control operations accumulate information on rainfall, runoff and river hydraulics which are summarized

and presented to supplement existing material on the subject.

Some phases of Southern New England hydrology. By Charles W. Sherman. Journal of New England Water Works Association. v. 48, no. 3. September, 1934. p. 255-271. Discussion of paper by Caleb Mills Saville.

Income.

Estimated returns from farms of large, medium, and small size of business in the spring wheat of South Dakota. By C. M. Hampson and Poul Christophersen. 1934. 23p. South Dakota. Agricultural Experiment Station. Circular no. 20.

Insect Control.

Big poison blower kills insects under tents. Popular Mechanics. v. 62, no. 1. July, 1934. p. 49. Special frames, one on each side of machine, support tents which cover vines as cyanide blower moves between rows. Lightweight tractor supports tent frames. Cyanide is introduced under each tent in blast of air from blower driven by tractor pulley.

Black light lures beetles to death in trap. Popular Mechanics. v. 62, no. 1. July, 1934. p. 54.

Insect trap tested. Electricity on the Farm. v. 7, no. 10. October, 1934. p. 18. Experiments are being carried on to determine most effective way of placing traps; how many to given number of trees, optimum height in tree, whether to place trap in open or close growing tree, etc. Values of lights of different intensities is also being studied. As supplement to spray program, it is being tried out at Massachusetts State College.

Insulation.

Designing insulation into farm buildings. By G. D. Andrews. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 350-352. Application of formula to many types of farm structures should determine necessity and economy of insulation. It should reduce designing of farm buildings to more exact basis. It should also provide good measuring stick for present plans and point way to research, and therefore to betterment in many designs.

Farm building insulation for thermal control. By E. R. Gross. New Jersey Agriculture. v. 16, no. 4. July-August, 1934. p. 2-3. Table gives insulating value of materials.

Irrigation.

All-American canal project started on 30-mile section. Engineering News-Record. v. 113, no. 16. October 18, 1934. p. 488-489. Contracts totaling $5,000,000 under way, involving 40,000,000 cu. yd. of excavation. Canal to convey water from Colorado River to Imperial and Coachella valleys in southern California for irrigation.

Irrigation. (Cont'd)

Costly slipshod irrigation. Arizona Producer. v. 13, no. 15. October 15, 1934. p. 3. More carelessness in irrigating than in any other agricultural practice.

Irrigates without ditches. Idaho Farmer. v. 52, no. 15. July 26, 1934. p. 11. Movable surface pipe proves serviceability. Puts water just where you want it, and in regulated amount, rather than put too much of it one place and too little another. Avoid loss of water by seepage and evaporation in principal ditches, and other interesting suggestions are that gophers and moles and the like can't dig holes in surface pipe and cause loss of water, and that not as many weeds are likely to grow along the"bank" of a pipe as make nuisances of themselves along the bank of water-carrying ditch.

Land Use.

Land use and human welfare. By H. R. Tolley. Montana Farmer. v. 22, no. 4. October 15, 1934. p. 3, 17. After all main reasons for retiring poorest land from farm production are reasons of human welfare. Such land does add something to commercial farm production. But our main concern with it in a rational program of land use is to stop wastage of human effort that occurs when farm families try to make a living from it.

Land use in relation to agricultural adjustment. By H. R. Tolley. 1934. 14p. Mimeographed. U. S. Department of Agriculture. Address given before the Extension Conference at Iowa State College, October 18, 1934.

Large scale regional development. By E. S. Draper. 1934. 11p. Mimeographed. Tennessee Valley Authority, Knoxville, Tennessee. Address delivered before joint meeting of National Conference on City Planning and American Civic Association, October 22, 1934.

Material America. By Struthers Burt. National Waltonian. v. 1, no. 10. April, 1934. p. 3-5. In last two years more money has been expended in United States in digging holes in ground and filling them up again than ever before in human history, and unfortunately this amiable but insane game is still extremely popular. We have built more unnecessary roads, which will cost us money in the future, than can be counted; we have unnecessarily straightened out more curves, thereby making roads even more uninteresting than they are today, and, incidentally, destroying vast number of trees while so doing, than can be put down in hundred note books; we have left undone most of things that we should have done, and done any number of things that shouldn't have been done at all. On the whole it has been an engineer's paradise, and although engineers are fine men, they have to be watched. They have fixed idea that anything that isn't straight is ugly.

Lubrication.

Composition, properties and uses of modern lubricating greases. By C.C. Wilch. National Petroleum News. v. 26, no. 36. September5, 1934. p. 26, 28-29, 32. Article is most complete condensed study of requirements

Lubrication. (Cont'd)

for lubricating greases, arranged according to type of components employed in their manufacture. Information given is excellent resume of present position of grease technology.

Miscellaneous.

Care of chain drives. Grain & Feed Journals. Consolidated. v. 73, no. 6. September 26, 1934. p. 228. Proper alingment. Correct adjustment. Lubricate frequently. Frequent cleaning. Well fitting sprockets.

Harnessing your car's wasted energy. Popular Mechanics. v. 61, no. 6. June, 1934. p. 850-852. Through harnessing even small portion of what now goes to waste automobile industry expects within next few years to provide motorist with many new comforts and conveniences.

Operation of unemployment-insurance systems in United States and in foreign countries. 1931 to 1934. Monthly Labor Review. v. 39, no. 2. August, 1934. p. 273-307.

Planning the kitchen. By Dr. Louise Stanley. Architectural Record. v. 76, no. 4. October, 1934. p. 303 -311.

Plastic weatherstrip comes in handy tube. Popular Mechanics. v. 62, no.1. July, 1934. p. 6. Plastic calking cement, resembling glaziers' putty, may be applied easily by means of tube in which it comes, ready to use. Adheres to iron, steel, wood, glass, stone or concrete, forms tough skin on surface, but remains soft underneath, expanding and contracting with surface on which it is applied. It never hardens or cracks. Cement may be used to seal cracks around window and door frames, to set glass in greenhouses and skylights, to mend cracks in brick, rock, concrete and stucco surfaces, to fill joints in silos and boats, to mend broken slate, tile or glass, and to waterproof basement walls.

Science in the public press. By Sir Richard Gregory. Science. v. 80, no. 2076. October 12, 1934. p. 323-330.

Some of the engineering and psychological aspects of higher speed. By E.G. McKibben. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 347-349.

Survey of the cooking practices in Maine rural and village households. By Merna Myrtha Monroe. 1934. 107p. Maine. Agricultural Experiment Station. Bulletin no. 372.

Time and cost evaluation of dishwashing by different methods. By V. Enid Sater. 1934. 19p. Washington. Agricultural Experiment Station. Bulletin no. 303.

Weaving seats and panels in furniture. By Doris M. Ufer. 1934. 16-p. Ohio State University. Agricultural College Extension Service. Bulletin no. 153.

Models.

Use ofengineering models. By A.V.Karpov. Military Engineer. v.26, no.150. November-December, 1934. p.435-440. In general, paper design does not add greatly to engineering knowledge. Properly conducted model study not only is tool permitting best possible solution of particular problem but, in nearly all cases,it will advance understanding and knowledge.

Motors.

Selection of motors for air conditioning. By Oliver S.Imes. Heating, Piping and Air Conditioning. v.6, no.11. November 1934. p.467-470,77.

Pumps and Pumping.

Centrifugal pumps,turbines,and propellers; basic theory and characteristics. By Wilhelm Spannhake. Cambridge, Massachusetts Institute of technology, Technology press, 1934. 328p.

Large pumps in English drainage works. Engineering News Record. v.113, no.17. October 25, 1934. p.533. It was stated in article published in our issue of September 27, p.399, that pumps of Middle Level Drainage and Navigation District in England are believed to be largest centrifugal pumps ever built. This statement needs to be qualified, as it is true only in so far as horizontal pumps are concerned. There are somewhat larger capacity pumps on Zuyder Zee drainage works in Holland.

Rotary pumps: their operation and applications. By William E.Bakewell. Power. v.78, no.11. November,1934. p.602-603. Lobed-impeller types. Internal-gear type. Rotary pump advantages. Rotary pumps under high pressure.

Rain and Rainfall.

Rainfall in South Africa causes changes in river courses. Engineering News Record. v.113, no.19. November 8,1934. p.389. Heavy floods and river flow in normally arid and semi-arid interior sections of Cape Colony and southwest Africa are reported as causing changes in river courses, and are turning attention again to projects for reclamation of these districts by diverting streams into original but long-abandoned channels, and formation of inland lakes. Traces of old river channels indicate that these arid districts,including great Kalahari Desert, were originally fertile lands, but that overwhelming floods cut new channels and diverted rivers to present courses. These conditions may be repeated,as some old river courses have now a heavy flow, and in some cases present floods are so great as to be cutting new channels and diversions. In fact it is said after recent season it may be necessary to remap rivers and streams in this part of Africa.

Reclamation.

Land improvement by warping. By A.G.Ruston. Journal of the Ministry of Agriculture, v.41,no.5. August,1934. p.436-442. Warping may be defined as artificial improvement of low-lying level ground, in vicinity of tidal estuaries,by deposits of rich alluvial matter brought in with tidal flow and distributed by its careful regulation.

Reclamation. (Cont'd)

New W. U. A. program. Arizona Producer. v. 13, no. 12. September 1, 1934. p. 15. Steps taken to borrow for dam on Verde and improvements to finish Salt River project. New program of Water Users - one dam on Verde, spillways for three lower dams on Salt River, rehabilitation of power canal above Roosevelt, canal enlargements, and miscellaneous betterments for distribution system - received unanimous endorsement.

Reclamation era revived. Arizona Producer. v. 13, no. 15. October 15, 1934. p. 6. Bureau decides to resume publication of valuable magazine for irrigation farmers.

Verde allotment cancelled. Arizona Producer. v. 13, no. 15. October 15, 1934. p. 6. PWA will not finance project, as Reclamation Engineers find cost too high for feasibility.

Reforestation.

Government plans thousand-mile shelterbelt. By E. R. Parson. Western Farm Life. v. 36, no. 9. September 15, 1934. p. 3, 9. Will afford protection and shelter to all farmers and animals who live in close proximity to it, and serve as a most valuable aid in prevention of erosion.

Reforestation of North Adams Watershed. By John P. Miller. Journal of New England Water Works Association, v. 48, no. 3, September, 1934. p. 272-274. Tends to prevent soil erosion and turbid water. Silting of reservoirs is reduced. Maturer trees retard melting of snow in spring and prolong run-off from that source. Forested areas check run-off in flood periods by storing in soil part of waters from rain and melting snow.

Shelterbelt project. By Harry N. Owen. Farmer and Farm, Stock and Home. v. 52, no. 18. September 1, 1934. p. 3, 10. Will check evaporation and wind. Article gives known facts regarding influence of forests on rainfall and wind movement and such other information as will give intelligent idea of plan.

Refrigeration.

Apportionment of the cost of supplying refrigeration. By H. L. Lincoln. Ice and Refrigeration. v. 87, no. 5. November, 1934. p. 251-255. Outline of simple method for determining cost of refrigeration for each service. Analysis of refrigeration required. Allowance figures in tons of refrigeration per ton of commodities for various conditions.

Refrigerated transportation of Bartlett pears from the Pacific northwest. By E. D. Mallison and C. L. Powell. 1934. 30p. U.S. Department of Agriculture. Technical bulletin no. 434.

Suggestions for freezing foods. Ice and Refrigeration. v. 87, no. 5. November, 1934. p. 245-247. Outline of proper methods for freezing preservation of fruits and vegetables grown on Pacific Coast, prepared

Refrigeration. (Cont'd)

by officials of Bureau of Plant Industry, United States Department of Agriculture. Microbiology of frozen pack fruits. Suggestions for specific products.

Silt.

Optical level siltometer. By Dr. V. I. Vaidhianathan. Proceedings of the Punjab Engineering Congress. 1933. p. 216-228. Paper no. 167. Apparatus may also be used for studying size distribution of soils, and rate of evaporation of water from a surface.

Silt conduction by irrigation outlets. By Pandit K. R. Sharma. Proceedings of the Punjab Engineering Congress. 1933. p. 229-262. Paper no. 168. Describes briefly few experiments carried out to investigate silt conducive power of certain types of irrigation outlets commonly used by Punjab irrigation department for distribution of supplies.

Silt exclusion from distributaries. By H. W. King. Proceedings of the Punjab Engineering Congress. 1933. p. 263-308. Paper no. 169.

Soil Moisture.

Moisture equivalent, field capacity, and permanent wilting percentage and their ratios in heavy soils. By R. A. Work and M. R. Lewis. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 355-362.

Soils.

Advances in soil-testing methods. An interview with C. A. Hogentogler, and A. M. Wintermyer. Engineering News-Record. v. 113, no. 19. November 8, 1934. p. 594-599. Specifically noteworthy advances have been made in (1) Testing technique required for particular purposes; (2) accuracy of hydrometer method of analysis; (3) practicability of liquid-limit device; (4) knowledge of effect of moisture content upon permeability; (5) stabilization of soils by grading, manipulation and admixtures; (6) soil-sampling apparatus; (7) improvement in compression-test apparatus; (8) apparatus for preparing undisturbed samples for test; (9) interpretation of compression-test data; and (10) knowledge of effect of size of loaded area.

Application of steam in the sterilization of soils. By Arthur H. Sonner. 1934. 20p. U. S. Department of Agriculture. Technical bulletin no. 443.

Surveying.

Description of bench marks. By William Bowie and H. G. Avers. Washington, U.S. Government Printing Office, 1933. 161-328p. U.S. Coast and Geodetic Survey. Reprint from special publication no. 18. Fourth general adjustment of precise level net in the United States and resulting standard elevations.

Surveying. (Cont'd)

Leveling in Florida. By Howard S. Rappleye. 1934, 105p. U. S. Coast and Geodetic Survey. Special publication no. 185.

Terracing.

Missouri's biggest farm job. By Raymond H. Gilkeson. Missouri Ruralist. v. 75, no. 18. Sept. 22, 1934. p. 3, 17. Building terraces.

Terrace will save your farm despite erosion menace. By Oren Bolin. Iowa Agriculturist. v. 35, no. 1. April, 1934. p. 8.

Tires.

Rubber tires pump up volume for tractor dealers. Implement and Tractor Trade Journal. v. 49, no. 22. November 3, 1934. p. 8-9, 21. Two years of service proves value of new wheel equipment to farmers, and develops valuable data for retain merchandising. Change-over found profitable on tractors several years old.

Tires that merely whisper. Popular Mechanics. v. 61, no. 6. June, 1934. p. 892-893, 122A.

Tractors.

Farmers can use both horses and tractors. By D. M. Howell. Iowa Agriculturist. v. 35, no. 1. April, 1934. p. 5. In answer to question as to which source of power is most economical for Iowa farmer, Agricultural Economics Section of Agricultural Experiment Station at Iowa State College has carried on some very interesting and successful experiments. Experiments were performed on actual farms in Iowa, and to make results impressive and accurate, over 100 average farms were studied. Cost per acre for motive power where both horses and tractor are used decreases as farms become larger up to 160 crop acres. On largest farms power cost increases where horses only are used but not where there is a tractor. Main reason is that effective use of teams becomes difficult on large farms while tractor becomes more economical. From this it is easily seen that effectiveness of use of horses increases with size of farm where tractor is used, and that where horses only were used, cost of power per acre increased as farm became larger than 160 crop acres. Tractor should never be used alone, but used as complementary source of power with horse.

Old horses and new tractors: Editorial. Farm Implement News. v. 55, no. 22. October 25, 1934. p. 8. Minimum demand indicated for horse and tractor replacement is close to 200,000 units, and maximum about 275,000. Whether this demand will be transformed into sales volume depends upon farm prosperity.

Potato production employing only tractor power. By P. U. Blasingame and A. W. Clyde. 1934. p. 8-20. Reprint from December 1933 issue of Agricultural Engineering.

Tractor development points to new era in power farming. By Fred W. Hawthorn. Iowa Agriculturist. v. 35, no. 1. April, 1934. p. 12.

Tractors. (Cont'd)

Tractor repair and maintenance. By R. I. Shawl. 1934. 48p. Illinois. Agricultural Experiment Station. Circular no. 425.

What's the cost? By C. K. Russell. Capper's Farmer. v. 45, no. 9. September, 1934. p. 5. Tractor equipment costs less than horse equipment for operating 640-acre farm.

Waste Products.

Production of oxalic acid from cellulosic agricultural materials. By H. A. Webber. 1934. 55p. Iowa Engineering Experiment Station. Bulletin no. 118.

Water, Underground.

Groundwater in the midwest drought area. By O. E. Meinzer. Engineering News-Record. v. 113, no. 16. October 18, 1934. p. 495-498. Interpretation of influence of geological formations on groundwarer resources of north-interior states and appraisal of effect of effect of drought on these water supplies.

Water Supply.

Private water supply problem. By K. B. Humphrey. Power Plant Engineering. v. 38, no. 11. November, 1934. p. 512-513. Method of calculating proper size pump and reservoir.

Water supplies in rural areas. Rural Electrification and Electro-Farming. v. 10, no. 113. October, 1934. p. 167-169. Interesting details of equipment for supply of water in rural districts, with notes on electrically operated automatic pumping sets at Weston Boosting Station near Spalding, Lincs.

Weather.

Next year's weather. By Milton Mackaye. Country Home. v. 58, no. 11. November, 1934. p. 10-12, 27-30. Discussion of long-range forecasting.

Weirs.

Experiments with a short-crested weir model. By C. C. Inglis. Proceedings of the Punjab Engineering Congress. 1933. p. 309-328. Paper no. 170.

Pressure pipe observations at Panjnad weir. By Ajudhia Nath Khosla. Proceedings of the Punjab Engineering Congress. 1933. p. 50-88. Paper no. 162.

Wells.

Influence of diameter of cylindrical well upon quantity of water produced. By Willard Gardner and Clark Affleck. Agricultural Engineering. v. 15, no. 10. October, 1934. p. 353-354.